Common Recommendations from the June 2003 NESDIS Data Users Workshop	
Constituent Recommendations	**Frequency of Recom.**
Access: Create 1-800 customer service number	1
Access: Create account executives	1
Access: Ensure format of surface weather data is in the same format; CD-ROM surface data different format when ordered as a single station	1
Access: Ensure NESDIS provides for access methods ranging from real-time to the full archive	1
Access: Identify data expert/help desk for major data bases or subjects	9
Access: Investigate methods to get high seas, offshore and coastal zone forecasts certified	1
Access: Investigate variations in timing among data centers to get data certified	1
Access: Maintain human customer interface	13
Access: Subset international surface data in global blocks	1
Access: Subset monthly international surface data into manageable sizes; too large a file;	2
Archive: All new sources of NWS data	1
Archive: Commercial imaging data	1
Archive: Currents-depth data	1
Archive: Data with higher resolution and global cover, specifically, AVHRR, reflectivity, soils and plant coverage	1
Archive: Declassify and archive military data	1
Archive: Determine whether aviation weather observations are suitable for all users	1
Archive: Develop a policy statement as why NESDIS is re-digitizing paper data that is already electronic (came from electronic media)	1
Archive: Develop mutiple versions data from preliminary to final edited, identifying the level of QC in the metadata	2
Archive: Ensure new instruments and satellites have archive plans	1
Archive: Ensure overall user community has input into decisions concerning archive data	15
Archive: Ensure overall user community has input into decisions concerning archive data; specifically external NOAA such as mesonets	4
Archive: Ensure that NESDIS has an interagency data management plan responsible for all data	1
Archive: GOES data before it becomes operational	1
Archive: GOES full disk scans; Hourly or better	1
Archive: High resolution in situ data	1
Archive: Investigate changes in Coast Guard data receipt and archive availability	1
Archive: Lightning data; special consideration due to current proprietary nature	1
Archive: MEDCAR/ACARS data	1
Archive: NCDC should be able to archive from backup media when primary is not available or defective	1
Archive: New data from Rutgers	1
Archive: New DMSP data at NGDC	1
Archive: Night-time lights products	1
Archive: Physical properties of water column	1
Archive: Provide for an easy mechanism for data providers to submit data and metadata to data centers	1
Archive: Rescue older data (eg. 19th century and older) and incorporate with existing data sets	5
Archive: Solar radiation data	1
Archive: Value added products	1
Data Management: Develop a NESDIS position paper on formats and archive plans	2
Data Management: Ensure back-up systems are in place to maintain near real time access to NESDIS data streams	2
Data Management: Ensure data stewardship for NESDIS data	5
Data Management: Ensure data stewardship for NESDIS data; investigate the Open Archival Information System (OAIS) as a reference model	1
Data Management: Provide seamless access to terabytes of data and related metadata ranging from real-time to high-quality archive along with associated climatology products	4
Data Quality: Develop real-time data QC for real time data	2
Data Quality: Ensure precipitation phase measurements are accurate	1
Data Quality: Ensure the highest quality and most complete data and metadata is made available	3
Data Quality: Issues between reliable data and rooftop data	1
Data Quality: NCDC assure quality	1
Data Quality: Quality more important than speed and accessiblity	1
Feedback: Continue user workshops	9
Feedback: Continue user workshops alternating among NESDIS centers	1
Feedback: Continue user workshops with an all NOAA data users workshop	1
Feedback: Continue user workshops; combine with GOES User Conference	1
Feedback: Continue user worshops at professional meetings (AMS, AGU, Oceans, etc.)	4
Feedback: Create data user panels to make recommendations to NESDIS offices	8
Feedback: Create newsletters/listservers to keep user community informed	7
Feedback: Create NPOESS data users working group	1
Feedback: Create online, moderated user forums	7
Feedback: Create web based customer survey tied to online ordering system	7

Feedback: Ensure feedback from users reach adminstrative levels within Centers	2
Feedback: Ensure outreach to users is customer driven in regard to new system development and training	4
Feedback: Ensure requirements for customer service are received from constituents	1
Feedback: Ensure satisfaction surveys target all users	2
Feedback: Ensure user community has input in testing online web systems	1
Feedback: Establish partnerships between the government and private sector utilizing the strenghs of the each group to solve problems	3
Feedback: Place emphasis on educational users to provide feedback at workshops	1
Feedback: Post results of user survey and client comments on the web	3
Formats: Determine whether the data centers should move toward common formats for archived data	5
Formats: Develop converters between data formats in order to make data available in commonly used formats	8
Formats: Ensure NESDIS data formats are formally supported by standards	4
Formats: Ensure NESDIS data formats are useable with major COTS software	1
Formats: Ensure overall user community has input into decision concerning data formats and standards	4
Formats: Store sensor data in native format	1
Metadata: Determine whether FGDC standard is sufficient or whether there is something simplier	1
Metadata: Develop tools to encapsulate metadata and data	2
Metadata: Ensure metadata development tools are available to non-NESDIS data providers	1
Metadata: Ensure metadata is useful to educational standards	1
Metadata: Ensure surface weather station relocations are maintained and available online	1
Metadata: Ensure the data provider is identified for each data set	2
Metadata: Ensure there is a link from a metadata search directly to the data	1
Metadata: Ensure there is accurate metadata to describe data	7
Metadata: Establish a rating methodology for similar data sets to allow user to determine the most appropriate data set for their application	4
Metadata: Improve data discovery by cataloging data with multiple search keys	2
Metadata: Improve metadata with links to journal articles and peer review of data	3
Metadata: Increase documentation availibity of analog data to include the volume of data in digital form	1
Metadata: Investigate automated metadata production	1
Metadata: Maintain documentation on version of data/metadata updates	2
Metadata: Maintain metadata on data set quality issues	1
Metadata: Provide additional information on the error characterists of data sets	1
New Products: Climate Reference Network; next generation should be global	1
New Products: Data to support forensic meteorology	2
New Products: Ensure satellites are in place to monitor the 2011 solar maximum	1
New Products: Ensure that NCDC incorporates climate atlases in their projects	1
New Products: Geostationary microwave sounder	1
New Products: Increase the number of COOP stations that report 100% of the time in near real time	1
New Products: Integrated high resolution, shallow water estuary data	1
New Products: Make better use of the GOES satellite by scheduling for full disc data during the "dark time" rather than focusing soley on the US coverage	1
New Products: Modeled data (global and regional) and related data	3
New Products: NEXRAD; higher resolution, more accurate data needed	1
New Products: Place emphasis on water resource products (snow pack, resevoir capacity level data, flow information, etc)	1
New Products: Products related quality of life (biosphere, chemical, etc.)	1
New Products: Products related to air quality and water quality	1
New Products: Satellite products designed for global hydrologic applications; soil moisture, land cover	2
New Products: Weather data as relative to land use planning	1
New Products: Weather data in support of energy related issues	1
New Products: Weather impacts on consumer products	1
New Products: Satellite oceanography products from NOAA and non-NOAA sources	1
New Services: Create a single agency to observe and protect water resources by integrating all the water-related agencies; agency be located in NESDIS	2
New Services: Develop a better understanding and prediction capability on the affects of solar data	1
New Services: Develop a comprehensive end-to-end integrated ocean observing system	1
New Services: Develop a comprehensive integrated observing system	2
New Services: Distribute hydrologic models in real time (event reconstruction)	1
New Services: Ensure that gauge datum are standardized (Lat/Lon)	1
New Services: Ensure that users can receive data directly from NOAAPort as opposed to just from the web	1
New Services: Ensure the effects on coastal resources are analyzed in terms of their economic, social and cultural effects	2
New Services: Improve global coordination to increase/enhance global data coverage	9
New Services: Improve global coordination to increase/enhance global data coverage; specifically ecosystem data and high resolution global AVHRR	1
New Services: Improve visualization tools that handle multiple data streams	1
New Services: Integrate multiple data sources (e.g.. NEXRAD, Satellites, in-situ) so that users can access all data with one entry point	15

New Services: Investigate climate and health linkages and issues	3
New Services: Link data centers acrros NOAA and other agencies for central data discovery	3
New Services: Migrate environmental data and products to GIS	6
New Services: Monitor the health of NOAAs observing systems in real time	1
Standards: Adapt available military technology for NESDIS purposes	1
Standards: Create cross agency standards (NOAA, USGS, EPA, NASA, etc.)	2
Standards: Develop better linkages between NOAA and International Partners (e.g. WMO, others)	2
Standards: Develop better linkages between NOAA and Partners (Customers, Data Centers and private sector, academic sector, public, etc.)	8
Standards: Develop integrated satellite data management plan; determine requirements for products timeliness (archive, real time or near real time) and data user requirements	1
Standards: Develop role clarification of demarcation line between the roles of the private sector and government.	1
Standards: Develop role clarification of demarcation line between the roles of the private sector and government. Third party providers to deliver value added GIS products	1
Standards: Develop standard algorithms	1
Standards: Ensure data are not proprietary and are fully accessible to the public	1
Standards: Ensure NESDIS maintains security of its data and systems and responds to incidents	1
Standards: Ensure that additional attention is given to the resources invested in satellite, launch, and instrumentation	1
Standards: Ensure that existing standards are used for metadata, downloading files and archiving	2
Standards: Ensure that NESDIS has sufficient budget to perform its mission	6
Standards: Ensure that NESDIS maintains in-house expertise	1
Standards: Ensure that NESDIS maintains training levels to improve efficiencies and long term quality	2
Standards: Ensure that weather observations are also taken where people are located (ie. Urban areas) as opposed to airports	1
Standards: Ensure there is a consistent pricing policy	1
Standards: Establish partnerships that work towards free and open exchange of data among countries	2
Standards: Minimize cost of data if not free	4
Standards: Re-assess the definition of a climate normal period	1
Standards: Tie data collected to NOAA strategic themes	2
Standards: Use existing data bases across NESDIS offices	1
Standards: Utilize a cross agency Office of the Federal Coordinator for Meteorology (OFCM) to get a cross agency view of data center functions.	2
Timeliness: Perform real-time tracking of data (in terms of completeness, quality, etc.)	1
Timeliness: Provide real time data availability	1
Timeliness: Shorten data to user cycle time	11
Timeliness: Shorten data to user cycle time for COOP data through modernization efforts	4
Web Access: Create "data" button on NOAA homepage and other offices to discover data	3
Web Access: Create "status of download" bar	1
Web Access: Create different levels of access available for different levels of users	7
Web Access: Create FAQs for web site	3
Web Access: Create metadata search for data by ZIP code	1
Web Access: Create metadata search to find closest weather station to a given site	1
Web Access: Create online subscription service to notify users of data and metadata updates	2
Web Access: Create online turorials on how to acquire data	6
Web Access: Create web-based trouble ticket system with feedback on problem status and web based satisfaction survey	6
Web Access: Develop a rules based search mechanism to enable users to find data	1
Web Access: Develop a showroom or exhibit space maproom to highlight data sets and how they are used	1
Web Access: Develop an inventory that lists offline data availability; move more data online	2
Web Access: Develop capability to update old marine climatic atlases and also produce on-demand summaries by location (Marsden Square)	1
Web Access: Develop focused portals for NESDIS data subjects	3
Web Access: Develop globally distributed and centrally located master directories containing NESDIS data	1
Web Access: Develop map search capabilities for NESDIS data in addition to lat/lon searches	3
Web Access: Develop stronger connections between data access and data discovery systems	1
Web Access: Develop user feedback process for NGDC's spidr data delivery	1
Web Access: Ensure that emphasis is placed on K-12 educational outreach	2
Web Access: Ensure that users are queried for the period of data requested	2
Web Access: Identify data expert for major data bases or subjects for each web page; every web page has a contact	2
Web Access: Implement "google-like" search of metadata	1
Web Access: Improve web interfaces for easier access	9
Web Access: Include expert web page designers as part of the team when developing online systems	1
Web Access: Investigate data warehousing/mining tools that will aid in data discovery	3
Web Access: Investigate natural language search and discovery capabilities	2
Web Access: Investigate streaming data mining algorithms for attaining knowledge for real time data	1
Web Access: Investigate THREADS protocol (IRI project) in regard to handling of time.	1

Web Access: Investigte artificial intelligence techniquests to aid in data discovery	1
Web Access: Partner with agencies already doing online tutorials on how to acquire data	1
Web Access: Partner with library scientists to develop searchable layers of metadata	3
Web Access: Post a summary of changes/additions to web sites at periodic intervals (e.g., What's New or What's Coming Up)	4
Web Access: Provide a registration service for NESDIS users	1
Web Access: Provide a web tracking capability so that users can return to a site and jump to where they left the web or review their activity	1
Web Access: Provide access to literature searches to determine what data sets have been used for projects	1
Web Access: Provide better image browsers for radar and satellite data	1
Web Access: Provide more timely updates of web outages	1
Web Access: Standardize the delivery of NOAA and non-NOAA satellite data.	1
Web Access: Standardize the delivery of NOAA and non-NOAA sites to meet the needs of space weather researchers; emulate the solar side of NGDC.	1
Comment: Accountability of distributed data sets	1
Comment: Aging population – loss of knowledge from workforce; affects COOP network	1
Comment: Apply developing cyber-infrastructure	1
Comment: Are the GIS tools smart enough to understand the different data sets	1
Comment: Array of data from different sources	1
Comment: As more data is input, the inter-operability will occur	1
Comment: Assign tasks and share since the price of hardware is low	1
Comment: Assume that speed, storage, and the pipeline are all vastly increased:	1
Comment: Bandwidth increasing	1
Comment: Better coordination and sharing of services	1
Comment: Better educated public	1
Comment: Broader bandwidth, affordable.	1
Comment: Climate, population	1
Comment: Collection of organizations developing standards	1
Comment: Communication backup	1
Comment: Communication methods will be upgraded/updated – Internet 2, bigger backbone systems	1
Comment: Consequences of climate change	1
Comment: Data archived by NCDC is not their data but for the most part NWS operational data	1
Comment: Data compression techniques, software development, analysis and storage	1
Comment: data needs to be easy for users to import and use	1
Comment: Data or value added products in hands of & distributed by researchers	1
Comment: data restrictions	1
Comment: Data set accountability	1
Comment: Data storage will be resource intensive	1
Comment: Data volume, proliferation of data sources	1
Comment: Desire for more data	1
Comment: Detailed and extended information for environmental decision makers	1
Comment: Develop appropriate tools using the web	1
Comment: Difference between data access and products- need greater for data	1
Comment: Difficulties: breaking money sharing barriers.	1
Comment: discussion of distributed vs. centralized data	1
Comment: Download for offline access and manipulation	1
Comment: Economic leverage	1
Comment: Economic value of the data	1
Comment: Ecosystem strains	1
Comment: Effective integration of cause and effect from multiple sources.	1
Comment: Emphasis of subsequent administrations	1
Comment: Ensure that government systems work reliably	1
Comment: Ensure that government systems work reliably	1
Comment: Ensure that NESDIS provides for the stewardship of data	1
Comment: Evolving distributed systems tech and tools	1
Comment: Field managers need data and information for decision making	1
Comment: Flexibility instrument design	1
Comment: Focus on metadata being defined	1
Comment: Focus on operational systems – way information is made available	1
Comment: Food sources being depleted	1
Comment: Formats for data storage and data distribution are different	1
Comment: Fossil fuel availability	1
Comment: Geographic boundaries shrinking or disappearing	1
Comment: Geopolitical cooperation	1

Comment: get NESDIS offices to agree on a standard	1
Comment: Global politics	1
Comment: Globalization- emerging political boundaries	1
Comment: Government cannot suddenly change ways to make information available	1
Comment: Government is not able to keep up with private technologies – operations and research have	1
Comment: Greater demands on research community for rapid product turnaround, greater accuracy	1
Comment: Greater importance of space weather	1
Comment: Greater needs, outstripping and cost of resources	1
Comment: HDF and NetCDF easily used and read	1
Comment: Hyper spectrum – more data, starting point for broader applications e.g. improved forecasts	1
Comment: Improve U.S. and World economic decision making through advanced data accessibility and functionality	1
Comment: Improved archive and storage capability	1
Comment: Improved data transfer (electronic for large volumes)	1
Comment: Improved instrumentation network of distribution	1
Comment: Improved modeling and accuracy	1
Comment: Increase data capacity, capability	1
Comment: Integrated approach – in situ, measured instruments provide	1
Comment: L Options	1
Comment: Less farmable land – environmental challenges	1
Comment: Limited resources requires balance between reformatting and archival	1
Comment: mammoth data volume increase	1
Comment: Master Environmental Library	1
Comment: Monthly international surface data description good	1
Comment: More accurate temperature and precipitation forecasts due to supercomputing	1
Comment: More geo-savvy public (citizens and students)	1
Comment: More observing systems	1
Comment: move data in cost effective modes; netCDF ~50% larger than GRIB	1
Comment: Natural resources – increased demand	1
Comment: Need for energy, and new sources	1
Comment: Need more and better data observations	1
Comment: NESDIS must align itself with a fast moving reality	1
Comment: NESDIS must be prepared for a large data influx	1
Comment: NESDIS must provide recognition for routine data gathering and stewardship	1
Comment: New environmental monitoring sensors	1
Comment: New for water	1
Comment: New software results in new data format needs	1
Comment: NPOESS support centers	1
Comment: NPP/NPOESS	1
Comment: Observing platforms, including satellite cofigurations	1
Comment: Obtain all satellite data that is needed	1
Comment: Pdf - form generation	1
Comment: Political boundaries	1
Comment: Political leadership / funding priorities	1
Comment: Population growth (increase in customer base, environmental pressure)	1
Comment: providing GOES, NEXRAD and CLASS data	1
Comment: Quality of data	1
Comment: Radar data	1
Comment: Regular migrations of media	1
Comment: Remember basics: quality is job #1, ensure quality metadata, ensure longevity of archive, seamless data access	1
Comment: Remember basics: quality is job #1, ensure quality metadata, ensure longevity of archive, seamless data access	1
Comment: Research vs. archive products	1
Comment: Scenario - increased data volume requires government to subcontract, resulting in security issues and oversight in a fragmented data environment	1
Comment: Scientific limitations reduced, changed	1
Comment: Sensor webs – targeted observations	1
Comment: shortages of water	1
Comment: Size of data archive/tools/distributed methods	1
Comment: Some file types are very slow to download	1
Comment: Storage area networks	1
Comment: Storage capacity increasing	1
Comment: Storage costs are dropping but other costs may be still too expensive for NOAA in regard to managing petabytes of data	1
Comment: Storage costs are dropping but other costs may be still too expensive for NOAA in regard to managing petabytes of data	1
Comment: Supercomputing costs goes down over time benefit increases	1

Comment: Support a future archive	1
Comment: Technology is progressing; computing power is increasing; bigger bandwidths; increasing price (hope to keep sat. cost same because of tech improvements)	1
Comment: Technology: computer , hardware, speed, storage, capacity, cyber-infrastructure	1
Comment: Terrorism/security issues	1
Comment: The number of users will increase and so will the level of sophistication	1
Comment: Timeliness also uncertainty	1
Comment: Today's priorities may not be tomorrow's	1
Comment: transportation increasing	1
Comment: uncertainties - global warning, social, political, ,economy, energy supplies, etc.	1
Comment: US Economy and investment for NOAA	1
Comment: use of XML now being applied by some users for information transfer	1
Comment: Users like daily international surface weather reports	1
Comment: Validity tests	1
Comment: Volume and variety of new data – hundreds of different satellites transmitting many data streams	1
Comment: We need to be careful in assuming that one big system of dumping data to users will work – it won't	1
Comment: what level of access is required, online, near online	1
Comment: Whether coordination occurs	1
Comment: Wireless communictation increase	1
Comment: Wireless communictation increase	1
Comment: World's problems are US problems.	1